












Date: Wednesday, 3/7/2007 1:18:08 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 407 FWD X-TUBE
Job Number	: 31053		
Estimate Number	: 12348		
P.O. Number	: <i>N/A</i>	Part Number	: D407667105
This Issue	: 3/7/2007	Drawing Number	: D407-667-145 REV B
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i>	Drawing Revision	: <i>N/A</i>
Previous Run	: 30781	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 3/23/2007
Checked & Approved By	: <i>[Signature]</i>	Qty:	1 Um: Each
Comment	: Est Rev: F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM		

Additional Product

Job Number:	
Seq. #	Machine Or Operation: Description :
1.0	DC DOCUMENT CONTROL
	 
Comment:	DOCUMENT CONTROL
	Photocopy bluefile and create labels as per PPP D206-667-105 CHG002 <i>N/A</i> Each
2.0	LANDING GEAR 1 LANDING GEAR RESOURCE 1
	 
Comment:	LANDING GEAR RESOURCE 1
	PULL FROM STOCK
	1 X D407-667-105 B <i>19620</i> CHG001
	1 X D407-667-105 B <i>[initials]</i> CHG001 <i>07-03-29</i>
3.0	D407667105 FWD Crosstube
	 
Comment:	Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
	FWD Crosstube
4.0	D2856400 Abrasion Strip
	 
Comment:	Qty.: 1.2138 f(s)/Unit Total : 1.2138 f(s)
	Pick:
	Qty Part number Description Batch
	2 D2856-400(Cut to 6.94") Abrasion Strip <i>N/A [Signature] plenty installed.</i>
5.0	D2873043 Nut Plate Assembly
	 
Comment:	Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
	Pick:
	Qty Part number Description Batch
	2 D2873-043 Nut Plate <i>31192 07-03-29</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/7/2007 1:18:08 PM
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 407 FWD X-TUBE

Job Number: 31053

Part Number: D407667105

Job Number:



Seq. #

Machine Or Operation:

Description:

6.0

D2873045

Nut Plate Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2873-045

Nut Plate

B29107

AT 07-03-29

7.0

D28911

Support 2.25 dia



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part number Description Batch

2 D2891-1

Support

N/A already installed

8.0

MS20601AD4W10

RIVET



Comment: Qty.: 14.0000 Each(s)/Unit Total: 14.0000 Each(s)

Pick:

Qty Part number Description Batch

14 MS20601AD4W10 Rivet

M103395

AT 07-03-29

9.0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Qty Part number Description Batch

4 MS21920-20

Clamp

N/A already installed

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips as per QSI 035 using DT8579. Note: (3) top holes should be facing up.

2-Install supports and clamps as per Dwg D407-667-145. Torque clamps to 80-100 in lb

N/A already installed

Touch-up rivet heads with Imron paint.

AT 07-03-29

DART

TRANSPORT CANADA APPROVAL #08-89

TEL: 1-613-632-3336
FAX: 1-613-632-4443

P/N	D407-667-105	CHG	CHG001
DESC	Crosstube Fwd High	SIC	SH01-5
LOT	B19620	SIC	SR01304NY
MODEL	Bell 407	SIC	

MADE IN CANADA

Form: mprocess

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/7/2007 1:18:08 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 407 FWD X-TUBE

Job Number: 31053

Part Number: D407667105

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC5

INSPECT WORK TO CURRENT STEP



070412



Comment: INSPECT WORK TO CURRENT STEP

12.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING
REPAINT CUFFS

ML 070411

①

13.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

BT 07-04-12

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
Pick Packing Kit

15.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)
Bolt
Batch: M102115 ✓
M2LH5 ✓

16.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)
Nut
Batch: M102536 ✓

17.0

AN510A

Bolt



Comment: Qty.: 10.0000 Each(s)/Unit Total: 10.0000 Each(s)
Batch: M103389 ✓

18.0

AN530A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)
Pick:Packing Kit
Qty Part number Description Batch
4 AN5-30A Bolt M102083 ✓

7/4/12 S9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: IT Date: 07/10/13
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 3/7/2007 1:18:09 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 407 FWD X-TUBE

Job Number: 31053

Part Number: D407667105

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN960JD516

Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)

Pick:Packing Kit

Qty Part number Description Batch

18 AN960JD516 Washer M102519

7/4/12 SA

20.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

7/4/13

21.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D407-667-105

Location: _____

PPP Rev: _____

PP B31723

22.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

7/4/13

Job Completion



W 7/4/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	31053
Description: Crosstube Assembly	Part Number:	D407-667-145
Inspection Dwg: D407-667-145 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

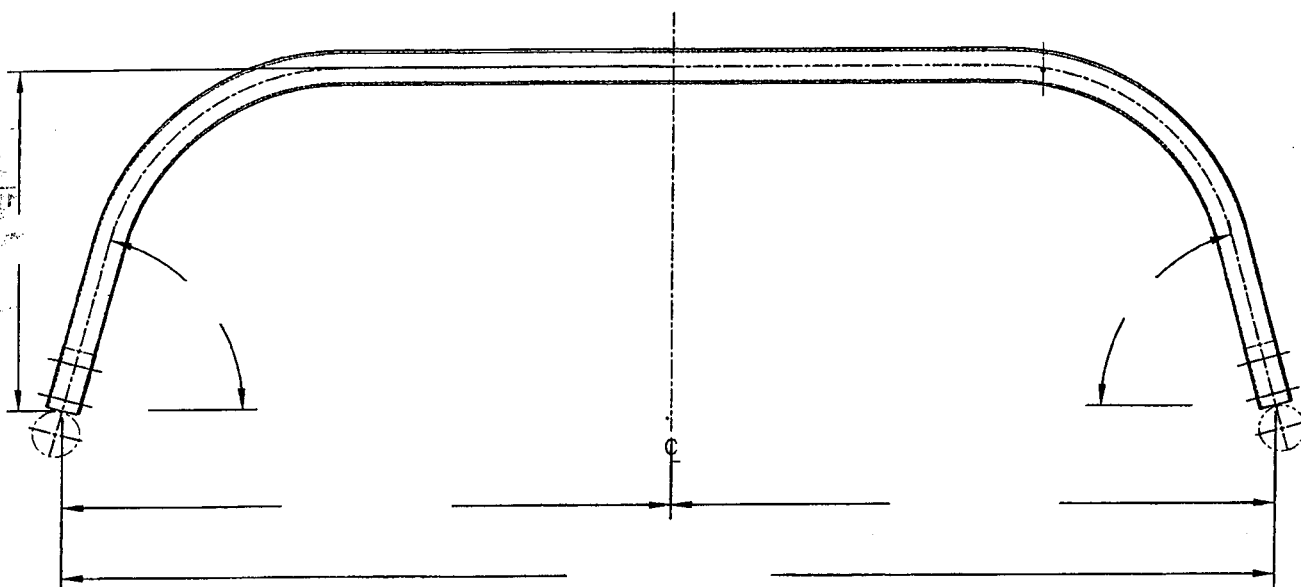
Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000				
	1.865	+0.005/-0.000				
	1.878	+0.005/-0.000				
	1.970	+0.005/-0.000				
	2.030	+0.005/-0.000				
	2.165	+0.005/-0.000				
	0.125	+/-0.010				
	R0.063	+/-0.010				
	R0.500	+/-0.010				
	R0.063	+/-0.010				
	4.438	+/-0.010				
SIDE B	2.240	+0.005/-0.000				
	1.865	+0.005/-0.000				
	1.878	+0.005/-0.000				
	1.970	+0.005/-0.000				
	2.030	+0.005/-0.000				
	2.165	+0.005/-0.000				
	0.125	+/-0.010				
	R0.063	+/-0.010				
	R0.500	+/-0.010				
	R0.063	+/-0.010				
	4.438	+/-0.010				
	113.20	+/-0.020				

Measured by:		Audited by:		Prototype Approval:	N/A
Date:		Date:		Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	

DART AEROSPACE LTD		Work Order:	31053
Description: Crosstube High Fwd (407)		Part Number:	D407-667-105
Inspection Dwg: D407-667-145 Rev: B		Page 1 of 1	

Required Dimension	Min	Max
Height	23.48	23.60
1/2 Span	45.88	46.0
Angle	54	56
Total Span	91.76	92.0



Comments

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>



DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH DS	APPROVED PH DS	DRAWING NO. D407-667-145	REV. B SHEET 1 OF 3
DATE 05.07.26		TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	SCALE NTS
A	02.05.08	NEW ISSUE	
B	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	

RELEASED
05.07.26

UNDER REVIEW
06.08.08
revision detail
PH
07.03.08

Qty	Part Number	Description
X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
1	D6010-115	CROSSTUBE
2	D2856-400-694	ABRASION STRIP
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
2	D2891-1	SUPPORT
14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
4	MS21920-20	CLAMP

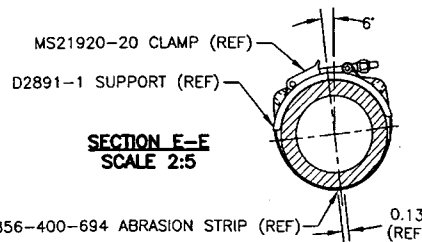
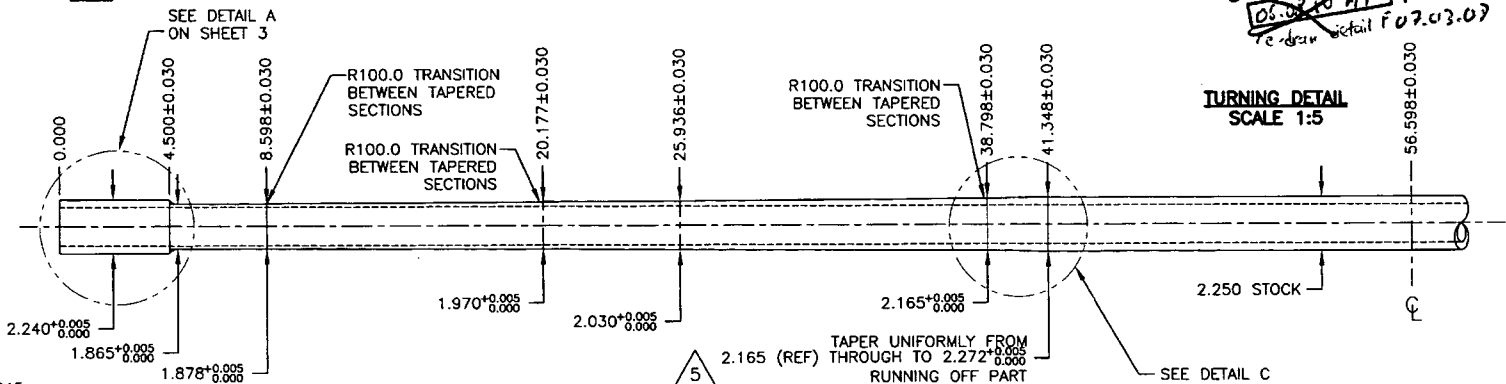
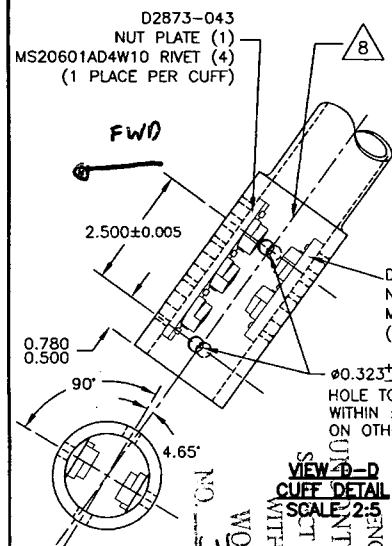
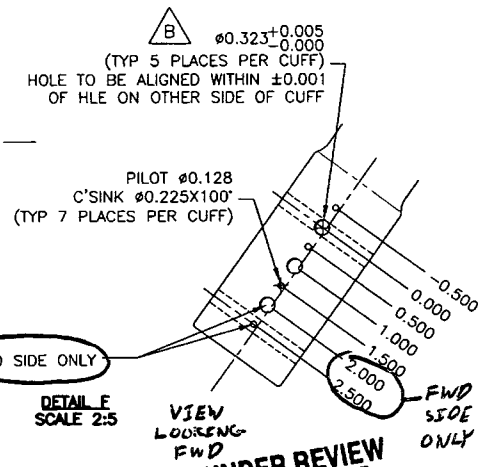
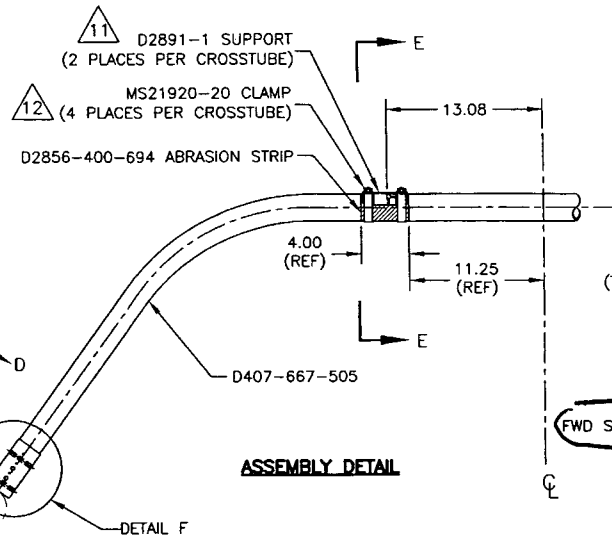
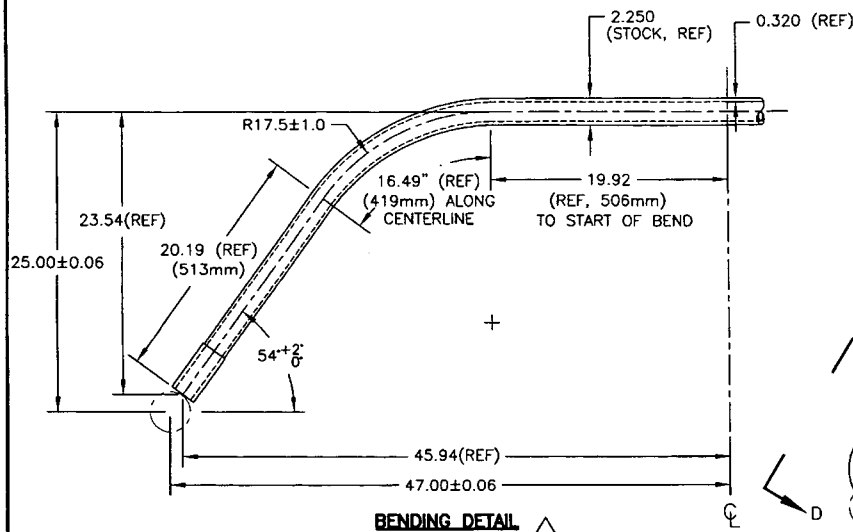
GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6010-115
FINISHED LENGTH = 113.20 ± 0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-400-694 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2891-1 SUPPORT, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) SEAL EDGES OF SUPPORTS AND ABRASION STRIP USING SIKAFLEX-241/291 SEALANT (OPTIONAL).
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

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WORK ORDER
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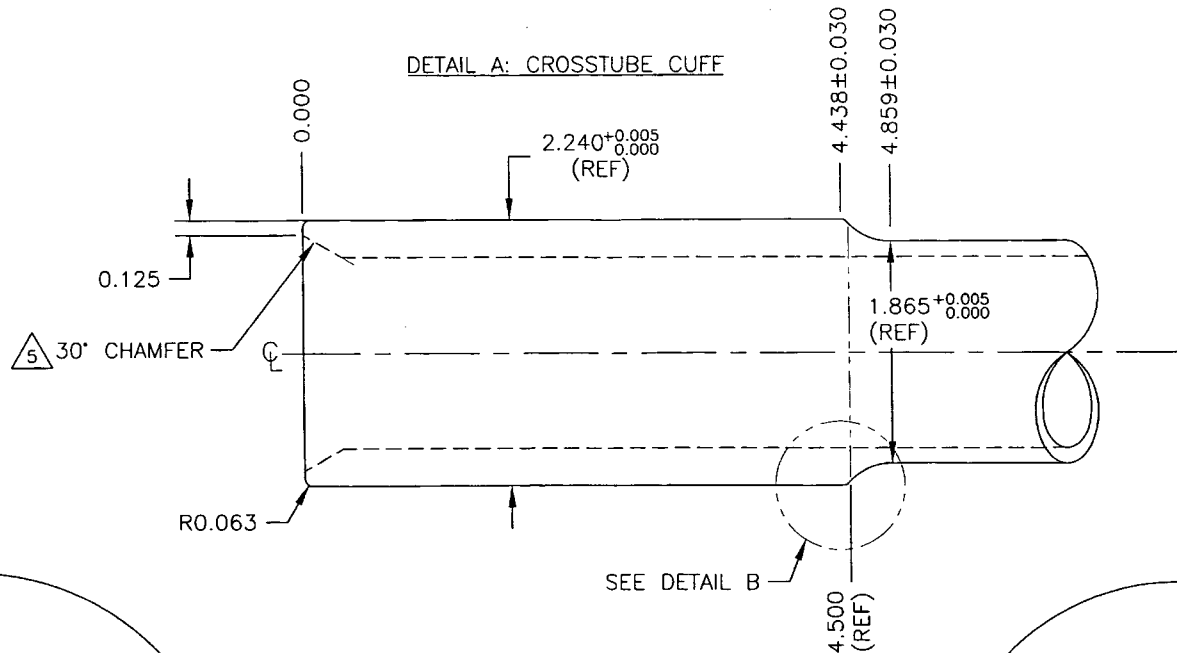
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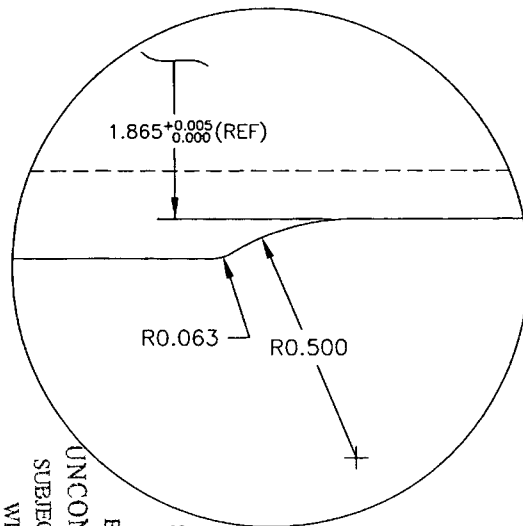
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DATE 05.07.26		TITLE CROSSTUBE ASS'Y (407 HIGH FWD)		SCALE 1:10	

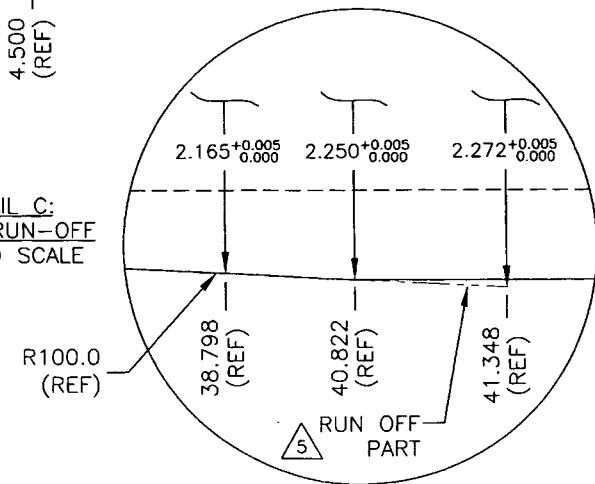
RELEASED
05.07.26



UNDER REVIEW
 PG. 0210 PH
 re-draw detail F
 PL 07.03.08
 RELEASED
 05-07-26



DETAIL C:
 TAPER RUN-OFF
 NOT TO SCALE



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		DATE 05.07.26		TITLE CROSSTUBE ASS'Y (407 HIGH FWD)	SCALE 1:1

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